

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1-21 (withdrawn)

Claim 22-24 (canceled)

Claim 25-26 (withdrawn)

Claims 27-29 (canceled)

Claim 30 (currently amended): The gene expression library of claims 27, 28, 29 A biased gene expression library comprising a pool of expression constructs, each expression construct containing (a) one or more cDNA or genomic DNA fragments derived from an environmental sample comprising a plurality of species of donor organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from an environmental sample comprising one or more species of donor organisms; or (c) cDNA or genomic DNA fragments preselected from a plurality of species of donor organisms derived from an environmental sample for a specific property, wherein the cDNA or genomic DNA fragments are operably-associated with one or more regulatory regions that drives expression of genes encoded by the cDNA or genomic DNA fragments in an appropriate host organism, and wherein the environmental sample is a soil sample.

Claim 31 (currently amended): The gene expression library of claim 27, 28, or 29 A gene expression library comprising a pool of expression constructs, each expression construct containing (a) one or more cDNA or genomic DNA fragments derived from an

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

environmental sample comprising a plurality of species of donor organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from an environmental sample comprising one or more species of donor organisms; or (c) cDNA or genomic DNA fragments preselected from a plurality of species of donor organisms derived from an environmental sample for a specific property, wherein the cDNA or genomic DNA fragments are operably-associated with one or more regulatory regions that drives expression of genes encoded by the cDNA or genomic DNA fragments in an appropriate host organism, and wherein the environmental sample is selected from the group consisting of deposits near hot springs, deposits near thermal vents, freshwater filtrates, marine sediments, estuarine sediments, or seawater filtrates.

Claim 32 (currently amended): ~~The gene expression library of claim 27, 28, or 29~~ A gene biased expression library comprising a pool of expression constructs, each expression construct containing (a) one or more cDNA or genomic DNA fragments derived from an environmental sample comprising a plurality of species of donor organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from an environmental sample comprising one or more species of donor organisms; or (c) cDNA or genomic DNA fragments preselected from a plurality of species of donor organisms derived from an environmental sample for a specific property, wherein the cDNA or genomic DNA fragments are operably-associated with one or more regulatory regions that drives expression of genes encoded by the cDNA or genomic DNA fragments in an appropriate host organism, and wherein at least one of the cDNA or genomic DNA

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

fragments comprises nucleotide sequences that encode for proteins or fragments thereof that are involved in secondary metabolism.

Claim 33 (currently amended): ~~The gene expression library of claim 27, 28, or 29~~ A
biased gene expression library comprising a pool of expression constructs, each
expression construct containing (a) one or more cDNA or genomic DNA fragments
derived from an environmental sample comprising a plurality of species of donor
organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from
an environmental sample comprising one or more species of donor organisms; or (c)
cDNA or genomic DNA fragments preselected from a plurality of species of donor
organisms derived from an environmental sample for a specific property, wherein the
cDNA or genomic DNA fragments are operably-associated with one or more regulatory
regions that drives expression of genes encoded by the cDNA or genomic DNA
fragments in an appropriate host organism, and wherein at least one of the cDNA or
genomic DNA fragments comprises nucleotide sequences that encode for proteins or
fragments thereof that are involved in antibiotic biosynthesis.

Claim 34 (currently amended): ~~The gene expression library of claim 27, 28, or 29~~ A
biased gene expression library comprising a pool of expression constructs, each
expression construct containing (a) one or more cDNA or genomic DNA fragments
derived from an environmental sample comprising a plurality of species of donor
organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from
an environmental sample comprising one or more species of donor organisms; or (c)

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

cDNA or genomic DNA fragments preselected from a plurality of species of donor organisms derived from an environmental sample for a specific property, wherein the cDNA or genomic DNA fragments are operably-associated with one or more regulatory regions that drives expression of genes encoded by the cDNA or genomic DNA fragments in an appropriate host organism, and wherein at least one of the cDNA or genomic DNA fragments comprises nucleotide sequences that encode for proteins or fragments thereof that are involved in polyketide biosynthesis.

Claim 35 (canceled)

Claim 36 (currently amended): ~~The gene expression library of claim 27, 28, or 29~~ A biased gene expression library comprising a pool of expression constructs, each expression construct containing (a) one or more cDNA or genomic DNA fragments derived from an environmental sample comprising a plurality of species of donor organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from an environmental sample comprising one or more species of donor organisms; or (c) cDNA or genomic DNA fragments preselected from a plurality of species of donor organisms derived from an environmental sample for a specific property, wherein the cDNA or genomic DNA fragments are operably-associated with one or more regulatory regions that drives expression of genes encoded by the cDNA or genomic DNA fragments in an appropriate host organism, and wherein the expression constructs are contained in host cells.

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

Claim 37 (previously presented): The gene expression library of claim 30 wherein the expression constructs are contained in host cells.

Claim 38 (previously presented): The gene expression library of claim 31 wherein the expression constructs are contained in host cells.

Claim 39 (previously presented): The gene expression library of claim 32 wherein the expression constructs are contained in host cells.

Claim 40 (previously presented): The gene expression library of claim 33 wherein the expression constructs are contained in host cells.

Claim 41 (previously presented): The gene expression library of claim 34 wherein the expression constructs are contained in host cells.

Claim 42 (canceled)

Claim 43 (currently amended): ~~The gene expression library of claim 27, 28, or 29~~ A biased gene expression library comprising a pool of expression constructs, each expression construct containing (a) one or more cDNA or genomic DNA fragments derived from an environmental sample comprising a plurality of species of donor organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from an environmental sample comprising one or more species of donor organisms; or (c) cDNA or genomic DNA fragments preselected from a plurality of species of donor

C020-P2C US Resp to 062104 OA FINAL 092704Page 6 of 15

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

organisms derived from an environmental sample for a specific property, wherein the cDNA or genomic DNA fragments are operably-associated with one or more regulatory regions that drives expression of genes encoded by the cDNA or genomic DNA fragments in an appropriate host organism, and wherein the expression constructs comprises a plasmid vector, a phage vector, a viral vector, a cosmid vector, or an artificial chromosome.

Claim 44 (previously presented): A biased combinatorial gene expression library, comprising a pool of expression constructs, each expression construct containing cDNA or genomic DNA fragments some of which are preselected from a plurality of species of donor organisms by hybridization of the cDNA or genomic DNA fragments to nucleic acid probes comprising nucleotide sequences that encode for proteins or fragments thereof that are involved in secondary metabolism, in which the cDNA or genomic DNA fragments are operably associated with one or more regulatory regions that drive expression of genes encoded by the cDNA or genomic DNA fragments in an appropriate host organism.

Claim 45 (previously presented): The biased combinatorial gene expression library of claim 44 wherein some of the cDNA or genomic DNA fragments are preselected by hybridization of the cDNA or genomic fragments to nucleic acid probes comprising nucleotide sequences that encode for proteins or fragments thereof that are involved in polyketide biosynthesis.

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

Claim 46 (previously presented): The biased combinatorial gene expression library of claim 44 wherein some of the cDNA or genomic DNA fragments are preselected by hybridization of the cDNA or genomic DNA fragments to nucleic acid probes comprising nucleotide sequences that encode for proteins or fragments thereof that are involved in antibiotic biosynthesis.

Claim 47 (canceled)

Claim 48 (previously presented): The biased combinatorial gene expression library of claim 44 wherein some of the cDNA or genomic DNA fragments are preselected by hybridization of the cDNA or genomic DNA fragments to nucleic acid probes comprising nucleotide sequences that encode for proteins or fragments thereof that are involved in the biosynthesis of erythromycin, antinorhodin, thiostrepton, virginiamycin, valinomycin, or actinomycin.

Claim 49 (previously presented): The biased combinatorial gene expression of claim 44, 46, or 48 wherein the expression constructs are contained in host cells.

Claim 50 (previously presented): The biased combinatorial gene expression library of claim 44, 46, or 48 wherein the expression constructs comprise a plasmid vector, a phage vector, a viral vector, a cosmid vector, or an artificial chromosome.

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

Claim 51 (currently amended): ~~The gene expression library of claim 27, 28, or 29~~ A
biased gene expression library comprising a pool of expression constructs, each
expression construct containing (a) one or more cDNA or genomic DNA fragments
derived from an environmental sample comprising a plurality of species of donor
organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from
an environmental sample comprising one or more species of donor organisms; or (c)
cDNA or genomic DNA fragments preselected from a plurality of species of donor
organisms derived from an environmental sample for a specific property, wherein the
cDNA or genomic DNA fragments are operably-associated with one or more regulatory
regions that drives expression of genes encoded by the cDNA or genomic DNA
fragments in an appropriate host organism, and wherein at least one of the cDNA or
genomic DNA fragments comprises nucleotide sequences that encode for proteins or
fragments thereof that are involved in peptide biosynthesis.

Claim 52 (currently amended): ~~The gene expression library of claim 27, 28, or 29~~ A
biased gene expression library comprising a pool of expression constructs, each
expression construct containing (a) one or more cDNA or genomic DNA fragments
derived from an environmental sample comprising a plurality of species of donor
organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from
an environmental sample comprising one or more species of donor organisms; or (c)
cDNA or genomic DNA fragments preselected from a plurality of species of donor
organisms derived from an environmental sample for a specific property, wherein the
cDNA or genomic DNA fragments are operably-associated with one or more regulatory

C020-P2C US Resp to 062104 OA FINAL 092704Page 9 of 15

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

regions that drives expression of genes encoded by the cDNA or genomic DNA fragments in an appropriate host organism, and wherein at least one of the cDNA or genomic DNA fragments comprises nucleotide sequences that encode for proteins or fragments thereof that are involved in glycoside biosynthesis.

Claim 53 (currently amended): The gene expression library of claim 27, 28, or 29 A
biased gene expression library comprising a pool of expression constructs, each
expression construct containing (a) one or more cDNA or genomic DNA fragments
derived from an environmental sample comprising a plurality of species of donor
organisms; (b) randomly concatenated cDNA or genomic DNA fragments derived from
an environmental sample comprising one or more species of donor organisms; or (c)
cDNA or genomic DNA fragments preselected from a plurality of species of donor
organisms derived from an environmental sample for a specific property, wherein the
cDNA or genomic DNA fragments are operably-associated with one or more regulatory
regions that drives expression of genes encoded by the cDNA or genomic DNA
fragments in an appropriate host organism, and wherein at least one of the cDNA or genomic DNA fragments comprises nucleotide sequences that encode for proteins or fragments thereof that are involved in aminoglycoside biosynthesis.

Claim 54 (previously presented): The gene expression library of claim 51 wherein the expression constructs are contained in host cells.

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

Claim 55 (previously presented): The gene expression library of claim 52 wherein the expression constructs are contained in host cells.

Claim 56 (previously presented): The gene expression library of claim 53 wherein the expression constructs are contained in host cells.

Claim 57 (previously presented): The biased combinatorial gene expression library of claim 44 wherein some of the cDNA or genomic DNA fragments are preselected by hybridization of the cDNA or genomic fragments to nucleic acid probes comprising nucleotide sequences that encode for proteins or fragments thereof are involved in peptide biosynthesis.

Claim 58 (previously presented): The biased combinatorial gene expression library of claim 44 wherein some of the cDNA or genomic DNA fragments are preselected by hybridization of the cDNA or genomic fragments to nucleic acid probes comprising nucleotide sequences that encode for proteins or fragments thereof that are involved in glycoside biosynthesis.

Claim 59 (previously presented): The biased combinatorial gene expression library of claim 44 wherein some of the cDNA or genomic DNA fragments are preselected by hybridization of the cDNA or genomic fragments to nucleic acid probes comprising nucleotide sequences that encode for proteins or fragments thereof that are involved in aminoglycoside biosynthesis.

C020-P2C US Resp to 062104 OA FINAL 092704Page 11 of 15

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

Claim 60 (canceled)

Claim 61 (previously presented): The biased combinatorial gene expression library of claim 45 wherein the expression constructs are contained in host cells.

Claim 62 (previously presented): The biased combinatorial gene expression library of claim 57 wherein the expression constructs are contained in host cells.

Claim 63 (previously presented): The biased combinatorial gene expression library of claim 58 wherein the expression constructs are contained in host cells.

Claim 64 (previously presented): The biased combinatorial gene expression library of claim 59 wherein the expression constructs are contained in host cells.

Claim 65 (canceled)

Claim 66 (previously presented): The biased combinatorial gene expression library of claim 45, wherein the expression constructs comprise a plasmid vector, a phage vector, a viral vector, a cosmid vector, or an artificial chromosome.

Appl. No. 08/986,186

Attorney Docket No. C020-P2C

Claim 67 (previously presented): The biased combinatorial gene expression library of claim 57 wherein the expression constructs comprise a plasmid vector, a phage vector, a viral vector, a cosmid vector, or an artificial chromosome.

Claim 68 (previously presented): The biased combinatorial gene expression library of claim 58 wherein the expression constructs comprise a plasmid vector, a phage vector, a viral vector, a cosmid vector, or an artificial chromosome.

Claim 69 (previously presented): The biased combinatorial gene expression library of claim 59 wherein the expression constructs comprise a plasmid vector, a phage vector, a viral vector, a cosmid vector, or an artificial chromosome.

Claim 70 (canceled)